

**ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM**

Animal Abstract

Element Code: AFCJC11010

Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Xyrauchen texanus*

COMMON NAME: Razorback Sucker

SYNONYMS: *Catostomus texanus*, *Catostomus cypho*, *Xyrauchen cypho*

FAMILY: Catostomidae

AUTHOR, PLACE OF PUBLICATION: Abbott 1861. Proc. Acad. Nat. Sci. Phila.

TYPE LOCALITY: Colorado and New rivers, Arizona

TYPE SPECIMEN: Unknown

TAXONOMIC UNIQUENESS: Monotypic genus

DESCRIPTION: Large river dwelling catostomid. Can attain lengths of 1.0 m (3.3 ft.) and weights of 6.0 kg (13.2 lbs) (Minckley 1973). Mouth is subterminal with few papillae on lips, lower lip is separated into two lobes by a medial groove. From Minckley (1973), the "head and body elongated. A sharp edged keel developed in adults behind occiput, supported by greatly produced, underlying bones. Lateral-line scales moderately small, 68 to 87 in number; scales often absent from, or deeply embedded in skin of anterior margin of predorsal keel. Dorsal fin relatively long, with 13 to 16, usually 14 or 15, fin-rays. Gill rakers slender and numerous, 44 to 50 on the first arch.

Color olivaceous to brownish-black above, lighter below (often yellow). Sides with brown or pinkish to reddish-brown stripes. Dorsal fin dark; anal fin yellow; caudal fin light yellow-brown. Breeding males black or dark brown on dorsum and upper sides, orange laterally, and bright yellow on belly." Breeding males also have coarse sharp tubercles on the anal, caudal and/or pelvic fins.

AIDS TO IDENTIFICATION: Adults razorbacks are easily distinguished from other suckers by the prominent predorsal keel. Young lack a keel and may be difficult to distinguish from other *Catostomus* species.

ILLUSTRATIONS: B&W photo (Minckley 1973:153)
B&W drawing (Page and Burr 1991)
Color photo (Rinne and Minckley 1991:33)
B&W drawing (Sublette et al. 1991:227)
B&W photo (Sublette et al. 1991:228)

TOTAL RANGE: Endemic to large rivers of the Colorado River Basin from Wyoming to Mexico. Believed extirpated from New Mexico (Sublette et al. 1990). Present distribution of natural populations is limited to Lake Mohave, Green River Basin and the Upper Colorado River Basin.

RANGE WITHIN ARIZONA: Historically razorback suckers inhabited the Colorado, Gila, Salt, Verde, and San Pedro rivers. Presently natural adult populations exist only in Lake Mohave, Lake Mead, and Lake Havasu.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Razorback suckers are long lived. Older individuals in Lake Mohave have been estimated at 40 + years. They tend to grow quickly in the first five to seven years, with growth being slow or nonexistent in old individuals. Both sexes are sexually mature by age four. Usually sedentary, but they can travel significant distances on occasion. The “keel” along the back and inset eyes are likely adaptive features to the high flood events of historical habitat.

REPRODUCTION: Spawning occurs from late winter through spring along gravelly shorelines or bays. Evidence suggests that suckers migrated from larger rivers to smaller tributaries prior to spawning. A single female is attended by 2 to 12 males, and the group moves in tight circles over the bottom. Spawning takes place when the group settles to the bottom and with a vibrating action release gametes. The eggs are adhesive and attach to the interstitial spaces within the gravel substrate. The young hatch in a few days and live along the shoreline for a time. Females will spawn repeatedly with several males. Sublette et al. (1991) describe changes in breeding males: "Males become dark brown to black on the back and develop a russet- to orange-colored lateral band and yellow belly. Coarse, sharp tubercles, which are hornlike outgrowths of skin, are developed on the anal, caudal, and pelvic fins, and on the caudal peduncle." Hatching success is highly dependant on water temperature with complete mortality in temperatures less than 10°C (50°F).

Razorback suckers are known to hybridize with flannelmouth suckers and Sonora suckers. Hatchery propagation has been successful and is being utilized for reintroduction programs.

FOOD HABITS: Razorback suckers feed on algae, insect larvae, plankton, and detritus.

HABITAT: Use a variety of habitat types from mainstem channels to slow backwaters of medium and large streams and rivers, sometimes around cover. In impoundments they prefer depths of a meter or more over sand, mud or gravel substrates. Adult razorbacks tolerate a wide range of temperatures from near freezing temperatures to 32.0° C (89.6° F), with optimum temperatures around 22-25° C (71.6-77.0° F).

ELEVATION: Intermediate to low elevation rivers. Arizona records indicate elevations of 181 - 5,000 ft. (55 - 1525 m), which includes some introduced sites.

PLANT COMMUNITY:

POPULATION TRENDS: The razorback sucker was once common in many of the rivers of the Colorado River Basin. In recent times with the impoundment of large rivers and other habitat alterations, there exist a few isolated adult populations in several large impoundments. Due to lack of recruitment these populations remain small. Lack of recruitment is due primarily to adverse changes in the temperature of water released from impoundments and to predation on eggs and larvae by non-native introduced species of fish. There has been limited success from reintroductions of young individuals. According to Minckley (AGFD Native Fish Diversity Review 1995), they are reproducing in the upper basin, but not recruiting. He also states that there is an unconfirmed report of razorback recruitment occurring at Dinosaur National Monument, but he thinks this is doubtful.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS:	LE with Critical Habitat (USDI, FWS 1991) Listed Critical Habitat (USDI, FWS 1994) [C1 USDI, FWS 1989] [C2 USDI, FWS 1985]
STATE STATUS:	WSC (AGFD, WSCA in prep) [State Endangered AGFD, TNW 1988]
OTHER STATUS:	Forest Service Sensitive (USDA, A-S National Forest 2000) [None, USDA, FS Region 3 1999] [Forest Service Sensitive, USDA, FS Region 3 1988] Listed Endangered (Secretaría de Medio Ambiente 2000) [Listed Endangered Secretaría de Desarrollo Social 1994] Group 2 (NNDFW, NESL 2001) [Group 2 (NNDFW, NESL 1994)]

MANAGEMENT FACTORS: **Threats:** altered flow hydrology and cold tailwater releases from reservoirs; diversion; predation by and competition with nonnative fishes; possibly parasites. **Management needs:** ameliorate effects of reservoirs and nonnative fish species in razorback waters; monitor status of populations.

PROTECTIVE MEASURES TAKEN: The razorback sucker was listed (USFWS October 23, 1991) as an endangered species with critical habitat. Critical habitat in Arizona includes: the Colorado River and its 100 year flood plain from the confluence with the Paria River to Davis Dam including Lakes Mead and Mohave to full pool elevation, from Parker Dam to Imperial Dam including Imperial Reservoir to the full pool elevation or 100 year flood plain whichever is greater, the Gila River and its 100 year flood plain from the AZ-NM border to Coolidge Dam including San Carlos Reservoir to the full pool elevation, the Salt River and its 100 year flood plain from State Route 77 bridge to Roosevelt Diversion Dam, the Verde River

and its 100 year flood plain from Forest Service boundary (Prescott National Forest in the vicinity of Perkinsville) to Horseshoe Dam, including Horseshoe Lake to full pool elevation. A Razorback Sucker Recovery Plan has not been completed (USDI, FWS 1994). Routine monitoring of existing populations, as well as artificial propagation and reintroduction programs are in progress.

SUGGESTED PROJECTS: As identified by status review (Bestgen 1990): "1) Broodstock and refugia population development. 2) Refine reintroduction strategies to enhance survival. 3) Identify locations for reintroduction experiments. 4) Monitor populations. 5) Resolve genetic diversity question. 6) Resolve causes of recruitment failure. 7) Define movements, migration, and habitat use. 8) Investigate other life history parameters."

LAND MANAGEMENT/OWNERSHIP: BIA - San Carlos Reservation; BLM - Yuma Field Office; FWS - Bill Williams, Cibola, and Havasu National Wildlife Refuges; NPS - Glen Canyon and Lake Mead National Recreation Areas; USFS - Apache-Sitgreaves, Coconino, Prescott, and Tonto National Forests; Lake Havasu State Park; La Paz County Park; TNC - Hassayampa River Preserve; Private.

SOURCES OF FURTHER INFORMATION

LITERATURE CITATIONS:

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ADDITIONAL INFORMATION:

Razorback suckers were an important food fish for modern populations along the Colorado River. Commercial fisheries existed as recently as 1949 (Minckley, 1973). Early maturity and longevity is characteristic of fish species that do not successfully recruit every year. Historically razorbacks may have only had successful spawning when conditions were just right.

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